

REMARKS

In the Office Action, claims 1-4, 11-15, and 20-23 were rejected. By the present Response, Applicant has amended claims 11, 16, and 20. Upon entry of the amendments, claims 1-4, 11-15, and 20-23 will remain pending in the present patent application. Additionally, Applicant has amended the Specification, and Figures 6, 8, and 9. With respect to the amendments to the application, Applicant respectfully asserts that no new matter has been added. In view of the foregoing amendments and the following remarks, Applicant respectfully requests reconsideration and allowance of all pending claims.

Examiner's First Objection

In the Office Action, the specification was objected to because "there is no description in the specification for the term 'interface circuit,' which is one of the essential elements of the claimed invention." Although the foregoing was presented as an objection, Applicant respectfully asserts that the underlying issue is one of clarity of independent claim 1 and its respective dependent claims 2-4—which are the only claims that recite an "interface circuit"—under 35 U.S.C. §112, first paragraph, for lacking support from a written description of the claimed invention, and Applicant addresses below the objection as such.

Respectfully, Applicant asserts that the claim recitation "interface circuit" is sufficiently described in the present patent application. To satisfy the written description requirement, a patent application must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. *See Moba B.V. v. Diamond Automation, Inc.*, 66 U.S.P.Q.2d 1429, 1439 (Fed Cir. 2003). It is worth emphasizing that this "possession test requires assessment from the viewpoint of one skilled in art." *Id.* (citing *Vas-Cath, Inc. v. Mahurkar*, 19 U.S.P.Q.2d 111 (Fed. Cir. 1991)). Possession may be shown in a variety of ways, including description of an actual reduction to practice, or by showing that the

invention was ready for patenting. *See Pfaff v. Wells Elecs., Inc.*, 48 U.S.P.Q.2d 1641, 1647. Indeed, an applicant may demonstrate possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, and diagrams that fully set forth the claimed invention. *See Lockwood v. American Airlines, Inc.*, 41 U.S.P.Q.2d 1961, 1966 (Fed. Cir. 1997). Of particular importance, there is no *in haec verba* requirement for claim recitations. *See* Manual of Patent Examining Procedure § 2163 (I)(B). That is, it is not necessary for a claim to use the exact language as presented in the specification to satisfy the written description requirement.

Furthermore, Applicant respectfully asserts that the Examiner has the initial burden of presenting evidence or reasoning to explain why persons skilled in the art would not recognize in the original disclose a description of the invention defined by the claims. *See* Manual of Patent Examining Procedure § 2163(II)(A)(3)(b). Indeed, there is a strong presumption that an adequate written description of the claimed invention is present when the application is filed. *See In re Wertheim*, 191 U.S.P.Q. 90, 97 (C.C.P.A. 1976).

With respect to the present application, Applicant respectfully asserts that the recitation "interface circuit" is sufficiently described and, thus, is in compliance with the written description requirement. Firstly, Applicant respectfully brings to the Examiner's attention that claim 1 of the present application was originally filed as claim 10 of Patent Application No. 09/995,106 (hereinafter "the '106 application") that issued as U.S. Patent No. 6,713,737 on March 30, 2004. In fact, the present application is a divisional application of the '106 application. During prosecution, claim 10 of the '106 application was subject to a restriction requirement and, as such, canceled without prejudice. Thus, claim 1 of the present application is an originally filed claim for which there is a strong presumption regarding its satisfaction of the written description requirement.

Secondly, Applicant respectfully directs the Examiner's attention to FIG. 6 of the present application as an example of the descriptive support for the recitation "interface circuit" in the present application. This figure illustrates an electrical schematic of a controller according to an exemplary embodiment. As described in the present application, FIG. 6 illustrates control circuitry 86 that includes jacks 258 that enable a temperature feedback device 60 to be electrically coupled to a controller 72 and to a data recorder 60. *See* Application, p. 11, ll. 11-21. And, as is best illustrated in FIG. 6, certain of these jacks 258 are electrically coupled to ground via a capacitor, which, as would be appreciated by one of ordinary skill in the art, is symbolically represented as "| (".

In view of the foregoing, Applicant respectfully asserts that the present application provides sufficient written description for the recitation "interface circuit." Accordingly, Applicant respectfully requests that the Examiner withdraw the present objection.

Examiner Second and Third Objections

In the Office Action, both the drawings and the specification were objected to for failing to conform with one another. Specifically, the fact that the figures did not illustrate reference numerals 640, 642, 644, 646, 648, 650, and 652 that are identified in the specification were objected to.

By the present Response, Applicant has amended FIG. 6 to include these reference numerals. With respect to these amendments, Applicant asserts that no new matter has been added. As discussed above, FIG. 6 is textually described in the Specification of the present application. *See* Application, p. 5, ll. 1-2; p. 11, l. 11 to p. 16, l. 7; p. 18, l. 18 to p. 20, l. 3. This description, taken in conjunction with the symbolic representations on FIG. 6 itself (e.g., the use of "| (" to represent a capacitor and "GND" for ground),

demonstrate that adding reference numerals to the already described components of FIG. 6 does not constitute the addition of new matter.

In view of the amendments to FIG. 6 and the foregoing remarks, Applicant respectfully requests that the Examiner withdraw the objections to the Specification and Figures of the present application.

Rejections Under Section 103

In the Office Action, claims 1-4, 11-15, and 20-23 were rejected under 35 U.S.C. § 103(a) as obvious in view of the Pacileo reference (U.S. Patent No. 5,185,513; hereinafter "Pacileo") and the Gipp et al. reference (U.S. Patent No. 5,449,234; hereinafter "Gipp") or the Muller reference (U.S. Patent No. 3,667,476; hereinafter "Muller"). In rejecting these claims, Pacileo was relied on as the primary reference and it was stated that "Pacileo shows every feature and structure as claimed except for the use of a capacitor to connected [*sic*] the conductors to ground." See Office Action mailed December 29, 2004, p. 4. To obviate this deficiency, either Gipp or Muller was relied upon as disclosing "a capacitor [used] in order to reduce electrical noises for a more accurate temperature feedback control system." See *id.*

Applicant, however, respectfully asserts that the Pacileo, Gipp, and Muller references, taken alone or together, do not satisfy a *prima facie* case of obviousness with respect to independent claim 1 and amended independent claims 11 and 20, and the claims depending therefrom, because these claims recite features not disclosed in Pacileo, Gipp, or Muller. Cf. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985) (holding that to establish a *prima facie* case, an examiner must not only show that the combination includes all of the claimed elements, but also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references).

Independent Claim 1 and the Claims Depending Therefrom

For example, the cited references do not disclose “a control circuit operable to control the application of power from a power source to an induction heating cable,” as recited in independent claim 1. (Emphasis added.) As discussed above, Pacileo is relied on for all recitations of claim 1 except for the coupling to ground through a capacitor. Applicant, however, respectfully asserts that Pacileo only discloses resistive heating mechanisms, which are wholly different from claimed induction heating cable. The Pacileo system includes a power supply 22 that is connected to cables 28 and 30 that are, in turn, electrically coupled to a ceramic heating pad 32. *See* Pacileo, col. 4, ll. 36-41. Additionally, Pacileo teaches that the heating element may be a braided element, an infrared heater, or a finger element, all of which are resistive heating mechanisms. *See id.* at col. 7, ll. 10-15. Applicant respectfully asserts that these resistive heating mechanisms cannot be equated with the induction heating cable recited in the instant claim.

As a practical matter, the resistive heating elements of Pacileo operate in a manner different than an induction heating cable would. In the Pacileo device, current from the power supply 22 passes through the ceramic element 32, causing the ceramic element 32 to increase in temperature. Heat from the ceramic element 32 then radiates and conducts into the workpiece 12, causing an increase in the temperature of the workpiece 12. By contrast, an induction heating cable 56, as exemplified in the present application, operates by producing a changing magnetic field 66 that, in turn, induces a flow of current 68 in a workpiece 52. Resultantly, the induced current 68 causes the temperature of the workpiece 52 to increase.

In summary, Applicant respectfully asserts that a resistive heating mechanism and an induction heating cable are two different, distinct devices that cannot be equated with one another. Accordingly, there is no reason to believe that the device of Pacileo is

operable to control the application of power to an induction heating cable, as is recited in claim 1.

Therefore, Applicant respectfully asserts that the cited references do not disclose all of the features recited in independent claim 1 and, as such, its respective dependent claims 2-4. With the foregoing in mind, Applicant respectfully request reconsideration and allowance of claims 1-5.

Amended Independent Claim 11 and the Claims Depending Therefrom

Applicant respectfully asserts that the cited references do not disclose “a temperature feed back device having a plurality of conductors and disposed to detect a temperature resulting from heating by an inductor, wherein the temperature feedback device or the plurality of conductors or any combination thereof is disposed within a magnetic field produced by the inductor,” as recited in amended claim 11. (Emphasis added).

Beginning with Pacileo, this reference discloses a temperature sensing means 14 that is configured to detect the temperature of a workpiece 12 heated by a resistive heating mechanism, the ceramic heating pad 32. This resistive heating mechanism is not equivalent to the inductor recited in the instant claim. As discussed above, resistive heating mechanisms heat workpieces, for example, in a wholly different and distinct manner than does an inductor. Moreover, the temperature sensing means 14 of Pacileo is not disposed within a magnetic field produced by an inductor, again because the Pacileo device employs resistive heating, and not an inductor.

Turning to Muller and Gipp, these references also do not disclose a temperature feedback device that is disposed to detect the temperature resulting from an inductor and that is disposed within a magnetic field produced by the inductor, as recited in the instant

claim. Rather, Muller discloses a device for “measuring, controlling, and monitoring human body temperature,” and, as such, does not employ an inductor for heating purposes. *See* Muller, col. 1, ll. 1-5 (emphasis added). Also in contrast to the recited inductor, Gipp relates to “an air temperature sensor having a sensing element and conditioning circuit packaged in a non-metallic housing.” *See* Gipp, col. 1, ll. 5-10 (emphasis added). Respectfully, with the foregoing in mind, Applicant asserts that neither of these references relates to heating resulting from an inductor, let alone a temperature feedback device that has components disposed in the magnetic field produced by such an inductor, as is recited in the instant claim.

Therefore, Applicant respectfully asserts that the cited references do not disclose all of the features recited in independent claim 11 and, as such, its respective dependent claims 12-15. With the foregoing in mind, Applicant respectfully requests reconsideration and allowance of claims 11-15.

Amended Independent Claim 20 and the Claims Depending Therefrom

Applicant respectfully asserts that the cited references, taken alone or together, do not disclose “an interface operable to electrically couple a signal representative of temperature resulting from heating by the inductor from a temperature feedback device to the electronic circuit, wherein the interface comprises at least one capacitor configured to couple electrical noise transmitted with the signal representative of temperature to ground,” as is recited in amended independent claim 20. (Emphasis added.) As discussed above, neither Pacileo, Gipp, nor Muller discloses a device that generates a signal representative of heat produced by an inductor. Pacileo discloses a temperature sensing means for detecting temperature change due to a resistive heating mechanism; Gipp discloses a temperature sensor for airflow and Muller discloses a system for heating and sensing human body temperature, and none of these references relates to heating resulting from an inductor.

Therefore, Applicant respectfully asserts that the cited references do not disclose all of the features recited in amended independent claim 20 and its respective dependent claims 21-23. With the foregoing in mind, Applicant respectfully requests reconsideration and allowance of claims 20-23.

Conclusion

If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



Date: March 29, 2005

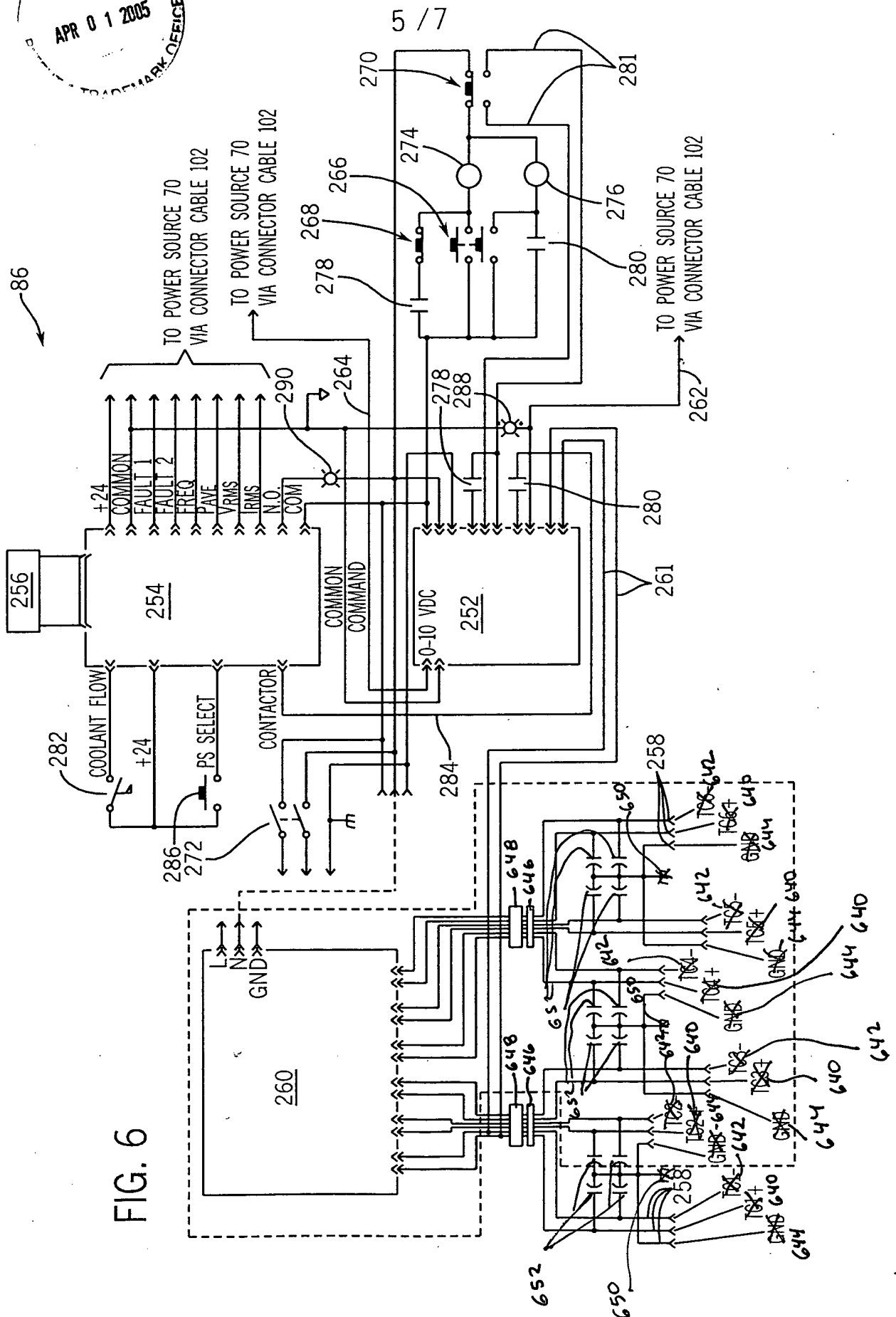
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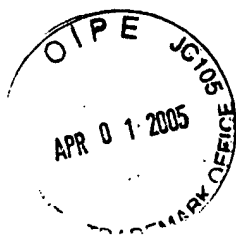
AMENDMENTS TO THE DRAWINGS

By the present Response, Applicant has amended the Figures. Specifically, Applicant has amended various reference numerals in FIGS. 6, 8, and 9 of the present application. These amendments are shown in red ink on the Amended Sheets provided herewith. Additionally, Applicant provides herewith Replacement Sheets that replace Figure Sheets 5 and 7 of the present application.

A circular stamp from the Office of Intellectual Property and Economic (OIP&E). The text "OIP&E" is at the top, "JC105" is at the top right, and "OFFICE OF INTELLECTUAL PROPERTY AND ECONOMIC" is written around the bottom. The date "APR 01 2005" is stamped in the center.

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F/G.





U.S. Serial No.: 10,784,421
 Inventor: Paul D. Verhagen
 Title: System For Reducing Noise From A
 Thermocouple In An Induction Heating System
 Docket No.: ITWO:0020-1(13222.01)/YOD

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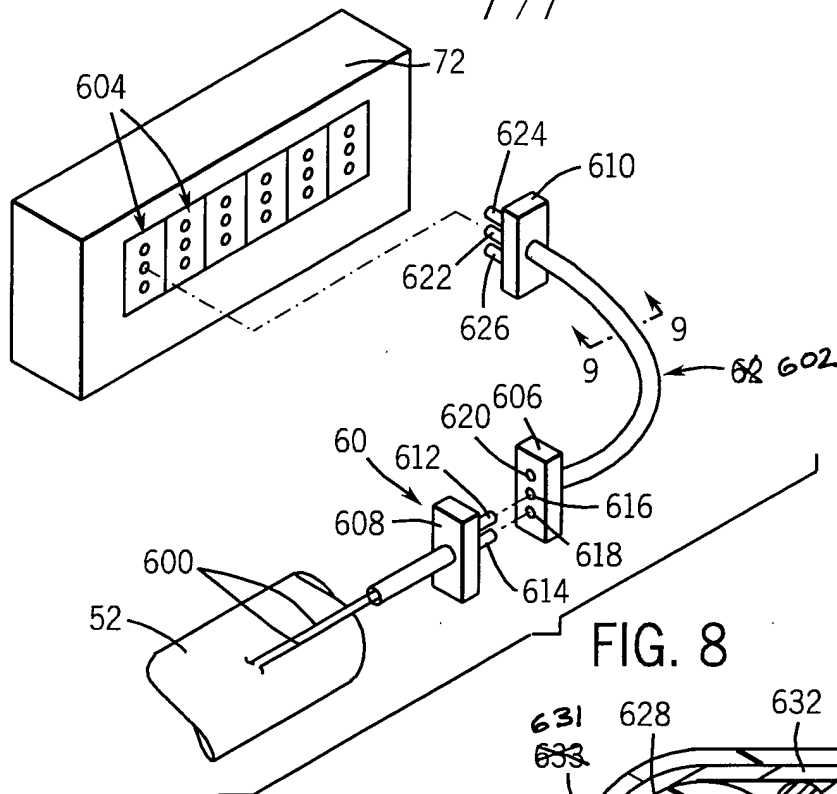


FIG. 8

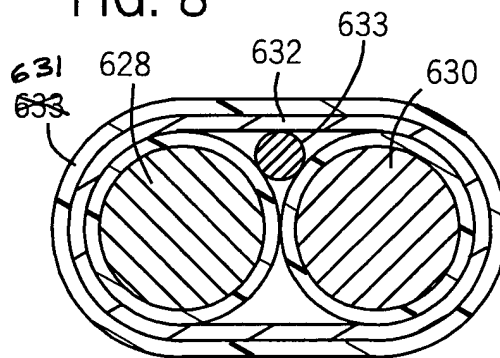


FIG. 9

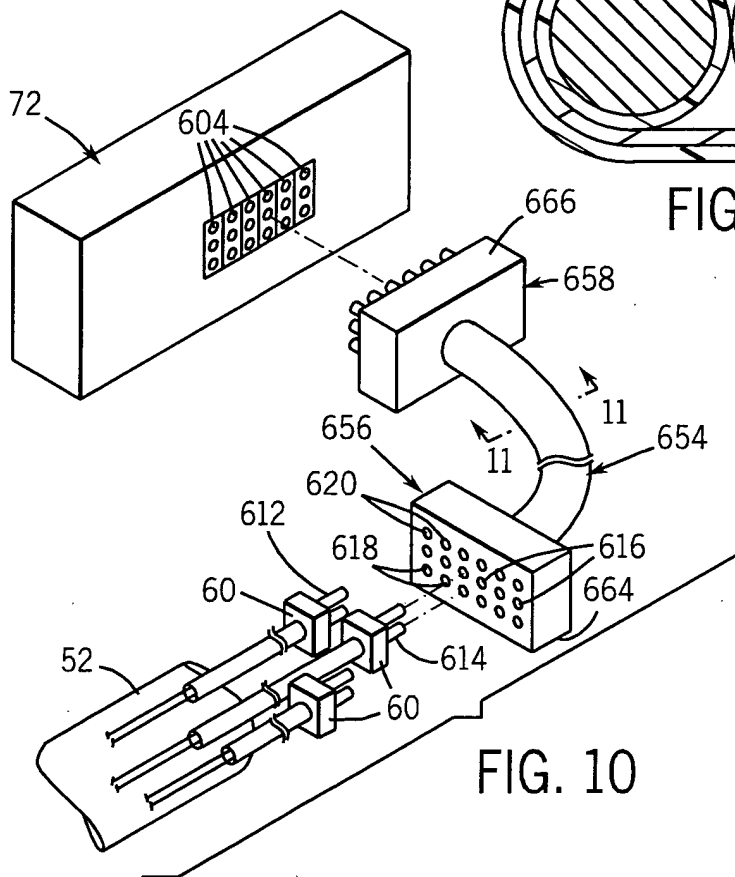


FIG. 10